

Patent
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REMARKS

Claims 17-19, 21-26, 28-30, 34-53 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 4,810,567 issued to Calcaterra, *et al.*

The fabric of Calcaterra is not the same as the fabric made by the Applicant's claimed method. Calcaterra discloses a fabric having a copolymer bound thereto, wherein the copolymer has an functional group X selected from carboxyl, amino, epoxy, halogen, isocyanate, carbonyl, nitrile, or hydroxyl moiety. (Calcaterra, col. 8, lines 55-68). This functional group is then reacted with another functional group Y that is part of an antimicrobial agent to form Z. (Calcaterra, col. 9, lines 51). Z includes such groups as amides, esters, urea, urethane, ether, amine, and imine groups. *Id.* Additionally, as pointed out by the Examiner, the copolymer may be terminated with an end group T, which may be a hydroperoxy group OOH. (Calcaterra, col. 8, lines 36-65). The antimicrobial "□" is attached to the Z functional group. (Calcaterra, col. 9, lines 25-60).

The fabric made by the method claimed by Applicant is simpler, in that a *monomer* is grafted to the fabric, wherein the monomer is a disinfectant that is the polymerizable monomer or derivative of the polymerizable monomer. (Claim 23). There is no functional group Z to which the antimicrobial or the chemical neutralizer is bound. The *monomer* is not polymerized into a *copolymer*. In a preferred embodiment, the monomer grafted to the fabric is a carboxylic acid. (Claim 34).

MPEP § 2131 provides:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, *i.e.*, identity of terminology is not required. *In re Bond*, 910 F.2d 831 (Fed. Cir. 1990).

To establish a *prima facie* case of obviousness of a claimed invention, all the claim

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limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim ~~against~~ the prior art. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

Calcaterra does not teach or suggest that a *monomer*, or specifically a carboxylic ~~acid~~, is grafted to the fabric to provide a disinfectant and, in a preferred embodiment, then converted to a percarboxylic acid as Applicant claims. Furthermore, Calcaterra includes an additional functional group Z that is not included in Applicant's fabric made by the claimed method. More importantly, Calcaterra discloses a fabric that includes a *copolymer* bonded to the fabric, which is not the same as Applicant *monomer* grafted to the fabric.

A description of the fabric may be found in Calcaterra, wherein the fabric (S) is disclosed as having copolymer (contained in brackets with an n subscript, noting the degree of polymerization) and a T as the end group. (Calcaterra, col. 8, lines 54-68). As disclosed in an example by Calcaterra, a typical copolymer grafted to the fabric may have a molecular weight of about 2000. (Calcaterra, col. 13, line 30). Comparing the structure of the copolymer of Calcaterra, shown in column 8, with the structure claimed by Applicant as shown on page 8 of the Specification, the fabric of Calcaterra having polymerized *copolymer* bonded to the surface of the fabric provides a very different fabric than the *monomer* grafted to the fabric claimed by Applicant.

Because Calcaterra does not disclose, teach or suggest each and every limitation claimed by Applicant, Applicant respectfully asserts that a *prima facie* case of anticipation or of obviousness has not been presented. Reconsideration and withdrawal of the rejection is respectfully requested.

Further addressing claim 34, Applicant claims a fabric having carboxylic acid grafted to the fabric surface that may then be oxidized to a regenerable percarboxylic acid to provide protection against chemicals. The Examiner points out that the copolymers grafted to the fabric of Calcaterra include the hydroperoxy group OOH as a chain terminator, therefore anticipating Applicant's claimed disinfectant fabric. (Office Action, p. 3, ¶ 2).

However, Calcaterra does not teach or suggest or disclose that the hydroperoxy group itself is bonded to the fabric as Applicant claims. Instead, Calcaterra clearly points out that the

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hydroperoxy group is a *chain terminator* that is bonded to the polymerized chain. (Calcaterra, col. 8, lines 35-45). It is the polymerized chain that is bonded to the fabric of Calcaterra and the hydroperoxy group of Calcaterra is bonded to the polymerized material as a chain terminator to the fabric.

Furthermore, as chain terminator, there is practically no disinfectant or ~~chemical~~ protection provided by the hydroperoxy group. As the example provided by Calcaterra, a polymer bonded to the fabric having a molecular weight of 2000 (Calcaterra, col. 13, line 3), if the chain was terminated by the hydroperoxy group, less than 2% of the bonded material would be hydroperoxy and such a percentage would not provide the chemical protection claimed by Applicant.

Therefore, because Calcaterra does not disclose a fabric having a carboxylic acid grafted to the fabric that is then oxidized to form a regenerable percarboxylic acid that provides protection against chemicals, as claimed by Applicant, Calcaterra does not teach or suggest or disclose each and every limitation claimed by Applicant.

Claims 35-53 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner has asserted that the claims contain subject matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The Examiner has requested that Applicant specifically point out where in the specification is there described a protective fabric for protection against chemicals.

Applicant respectfully asserts that the specification includes adequate description of the subject matter. First, original claims 21 and 22 both claim that a sufficient amount of polymerizable monomer is grafted onto the fabric to detoxify pesticides and to detoxify chemical and biological weapons.

Furthermore, the specification discloses that "because the peracid group is a nonspecific oxidizer, microorganisms are eradicated without the likelihood of significant resistance developing and chemical agents are decontaminated on contact with the modified fabric surface."

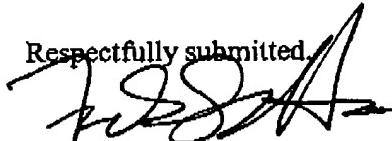
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(Specification, p. 5, lines 27-29). Furthermore, the specification discloses that "in addition, these surface-modified fabrics could be used in chemical-protective clothing for agricultural workers to reduce skin exposure to pesticides as well as protecting military personnel from biological and chemical weapons." (Specification, p. 6, lines 8-11). "The peracid functional groups are permanently immobilized to the fabric providing potent microbiological and chemical protection." (Specification, p. 6, lines 14-15). "Importantly, after exhaustion of the fabric's antimicrobial/detoxifying properties, regeneration can be accomplished by treating the fabric with mineral acid and hydrogen peroxide. (Specification, p. 6, lines 22-23). Such fabric's wide variety of uses and can serve many sectors including medicine, agriculture, military and consumer products. (Specification, p. 6, lines 25-27).

Because the specification adequately discloses the claimed subject matter, Applicant respectfully requests reconsideration and withdrawal of the rejection.

Applicant respectfully asserts that all claims are now in condition for allowance and respectfully requests the timely issuance of a Notice of Allowance. If the Examiner believes that a telephone interview would expedite the examination of this pending application, the Examiner is invited to telephone the below signed attorney at the convenience of the Examiner. In the event there are additional charges in connection with the filing of this Response, the Commissioner is hereby authorized to charge the Deposit Account No. 50-0714/LYNN/01SL of the firm of the below-signed attorney in the amount of any necessary fee.

Respectfully submitted,



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